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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,626	07/05/2000	ANDREAS MAIER	00114	2631
23338	7590	12/22/2004	EXAMINER	
DENNISON, SCHULTZ, DOUGHERTY & MACDONALD 1727 KING STREET SUITE 105 ALEXANDRIA, VA 22314			TSAI, HENRY	
			ART UNIT	PAPER NUMBER
			2183	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/582,626

Applicant(s)

MAIER ET AL.

Examiner

Henry W.H. Tsai

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-- Th MAILING DATE of this communication appears on the cov r sheet with the corr spondenc address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 19-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19, 20, 23-36, and 39-42 is/are rejected.
- 7) ☒ Claim(s) 21, 22, 37 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 20, 23-27, 32, 34-36, 39, 41, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Kieninger (USP 4,627,771) (Kieninger'771).

Referring to claim 41, Kieninger'771 also discloses, as claimed, a milling head having a body (1, see Fig. 2) and cutting inserts (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) wherein each cutting insert is adjustable in recesses (32, see Fig. 1) for clamping purpose, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is positioned in a receiving part (32, see Fig. 1) in a positive-fitting manner (Note the positive-fitting manner occurs

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especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2, to effectively prevent movements in any direction) and is fixed in its position by means of the clamping element (52, 53, see Figs. 2 and 9, and Col. 5, lines 52-62), characterised in that the clamping element is wedge shaped (the narrowed portion contact the surface of insert 36, see Fig. 9) and is received in the recess (32, see Fig. 1) in a positive-fitting manner (as set forth, the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2, to effectively prevent movements in any direction).

Referring to claim 42, Kieninger'771 also discloses, as claimed, a milling head having a body (1, see Fig. 2) and cutting inserts (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) wherein each cutting insert is adjustable in recesses (32, see Fig. 1) for clamping purpose, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is positioned in a receiving part (32, see Fig. 1) in a positive-fitting manner (Note the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2) and is fixed in its position by means of the clamping element (52, 53, see Figs. 2

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and 9, and Col. 5, lines 52-62), characterised in that the clamping element is wedge shaped (the narrowed portion contact the surface of insert 36, see Fig. 9) and is received in the recess (32, see Fig. 1) in a positive-fitting manner (as set forth, the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2), wherein the cutting insert is provided with an inclination (on the surface of inert 36, see Figs. 4 and 9) on the side engaging with the clamping element, wherein the clamping element is provided with an inclination (on the narrowed portion contact the surface of insert 36, see Fig. 9) on the side engaging with the cutting insert.

Referring to claim 20, Kieninger'771 also discloses: the cutting insert can be adjusted by means of a wedge or screw (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68).

Referring to claim 23, Kieninger'771 also discloses: a receiving part (50, see Fig. 4) for the clamping element (52 or 53, see Fig. 4) is provided and the clamping element is disposed in a displaceable manner in said receiving part.

Referring to claim 24, Kieninger'771 also discloses: the receiving part (50, see Fig. 4) for the clamping element (52 or 53, see Fig. 4) crosses the receiving part (32, see Fig. 1) of the cutting insert (comprising 6, 4, and 36, see Fig. 4).

Referring to claim 25, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is provided with an inclination (46, see Fig. 4) on the side engaging with the clamping element (note the element 49 as shown in Fig. 4 is best reasonably and broadly interpreted as a clamping element since it also contributes the clamping force applied to the cutting insert).

Referring to claim 26, Kieninger'771 also discloses: the inclination (46, see Fig. 4) being formed at an angle of about 10°.

Referring to claim 27, Kieninger'771 also discloses: the clamping element (52 or 53 see Fig. 9) is provided with an inclination (the portion contacting the insert 36, see Fig. 9) on the side engaging with the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4).

Referring to claim 32, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36, see Fig. 4) comprises a turning plate (6, see Fig. 2) which is screwed to a carrier.

Referring to claim 34, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36, see Fig. 4) is L-shaped,

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wherein the cutter (6, see Fig. 2) is located in the front region of the short limb (4, see Fig. 2).

Referring to claim 35, Kieninger'771 also discloses: the inclination (46, see Fig. 4) is located on the long limb (36, see Fig. 4) .

Referring to claim 36, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) comprising a rotatable cutting plate carrier (11, see Fig. 2) which supports the cutter (6, see Fig. 2).

Referring to claim 39, Kieninger'771's adjusting element (such as any of elements 56, 24, and 25, see Fig. 2 and Col. 6, lines 62-68) is best reasonably and broadly interpreted as a conical screw since the front end thereof having a conical shape as shown in Fig. 2.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

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art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Kieninger (USP 4,964,763) (Kieninger'763).

Kieninger'771 discloses the claimed invention except for: the cutting insert being positioned in an eccentric bushing which is mounted in a positive-fitting manner.

Kieninger'763 disclose a cutting tool comprising the cutting insert (8, see Fig. 2) being positioned in an eccentric bushing (17, see Fig. 4, and Col. 5, line 27) which is mounted in a positive-fitting manner.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the cutting insert being positioned in an eccentric bushing which is mounted in a positive-fitting manner, as taught by Kieninger'763, in order to facilitate the radial adjustment for the Kieninger'771's cutter.

5. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771.



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Kieninger'771 discloses the claimed invention except for: the angle of the inclination of the clamping element being smaller than the angle of the inclination of the cutting insert (claim 28); the difference in the inclination angles being about 2° (claim 29); and a differential screw being provided for the purpose of adjusting the cutting insert

However, it is old and well known in the art to use the angle of the inclination of the clamping element is smaller than the angle of the inclination of the object to be clamped such as a cutting insert as claimed in order to facilitate inserting the clamping element thereinto.

Further, Kieninger'771 also discloses: a screw (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68) is provided for the purpose of adjusting the cutting insert (comprising 6, 4, and 36, see Fig. 4). Using a differential screw for adjusting a cutting insert is old and well know in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the angle of the inclination of the clamping element being smaller than the angle of the inclination of the cutting insert in order to facilitate inserting the clamping element; and the difference in the inclination angles being about 2° is just an alternate

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arrangement of the angles of the inclination of a clamping mechanism.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise a differential screw being provided for the purpose of adjusting the cutting insert since it is just an alternative screw comparing with that used in the Kieninger'771's device.

6. Claims 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Gupta (USP 5,934,842).

Kieninger'771 discloses the claimed invention except for: the cutting insert comprising a cutter which is soldered on to a carrier (claim 31); and the cutter and/or turning plate consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (claim 33).

Gupta disclose a milling cutter comprising the cutting insert (21, see Fig. 3) comprising a cutter (36, see Fig. 3, and Col. 4, lines 43-46) which is soldered on to a carrier (31, see Fig. 3); and the cutter and/or turning plate (36, see Fig. 3) consists of hard metal, cermet, ceramic, CBN, polycrystalline

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natural and synthetic diamond as a thin and thick film (37, see Fig. 3, and Col. 4, lines 43-46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's machine to comprise the cutting insert comprising a cutter which is soldered on to a carrier; and the cutter and/or turning plate consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film, as taught by Gupta, in order to increase the securing strength between the cutter and the carrier of the Kieninger'771's tool, and to increase the cutting life of the Kieninger'771's cutter.

7. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Allemann (USP 4,929,131).

Kieninger'771 discloses the claimed invention except for: a cooling arrangement being provided in the basic body.

Allemann discloses a machine tool comprising a cooling (42, see Fig. 3, and Col. 3, lines 31-35) arrangement being provided in the basic body.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify

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Kieninger'771's tool to comprise a cooling arrangement being provided in the basic body, as taught by Allemann, in order to facilitate cooling the Kieninger'771's cutter for it's longer cutting life.

***Allowable Subject Matter***

8. Claims 21, 22, 37 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

9. Applicant's arguments filed 10/6/04 have been fully considered but they are not deemed to be persuasive.

Regarding the 35 U.S.C. §112, second paragraph problems, Applicant's response has overcome these objections and rejections.

Applicants argue that contrary to the Examiner's position, the effect of clamping is not providing a seat for the cutting insert, but the supporting body 36 is clamped by applying the

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clamping means (see col. 5, lines 59-62). This clamping engagement by no means is a positive fit, but a non-positive fit, namely, a frictional connection by force. A positive fit is defined to be caused by the shape of the two parts which ensures their contact (page 10, lines 10-15). Examiner disagrees with Applicants. As set forth above in the art rejection, Kieninger'771 tool comprises the positive-fitting manner to effectively prevent movements in any direction which occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2.

Applicants argue that moreover, the prior art structure is such that the adjustment of the tool is not variable (page 10, lines 17-18). Examiner disagrees with Applicants. As set forth above in the art rejection, Kieninger'771's adjusting element can be one of such as elements 56, 24, and 25, see Fig. 2 and see also Col. 6, lines 62-68.

Applicants also argue that reference numeral 46 defines an indentation and not an inclination (page 8, line 19). Examiner disagrees with Applicants. As shown in Fig. 4, element 46 can be interpreted as having inclination since it comprises an inclined surface clearly shown in the figure.

Applicants also argue that the set screw 49 is not a clamping element (page 11, lines 3-9). Examiner disagrees with

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Applicants. As set forth in the art rejection above, the element 49 as shown in Fig. 4 is best reasonably and broadly interpreted as a clamping element since it also contributes the clamping force applied to the cutting insert.

Applicants also argue that the angle in Figure 4 of the prior art is considerably larger than the 10 degree angle as indicated in claim 26 (page 11, lines 18-20). Examiner disagrees with Applicants. As set forth in the art rejection above, Kieninger'771 also discloses: the inclination (46, see Fig. 4) being formed at an angle of about 10° as claimed.

As to claim 27, Applicants also argue that the faces of the clamping elements 52, 53, are adapted to match the (shell) shape of the supporting body 36 (see the bottom of col. 5). Thus, there is no inclination or slope (page 11, lines 21-23). Examiner disagrees with Applicants. As set forth above, referring to claim 27, Kieninger'771 also discloses: the clamping element (52 or 53 see Fig. 9) is provided with an inclination (the portion contacting the insert 36, see Fig. 9) on the side engaging with the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4).

With respect to claim 28, Applicant's arguments (page 12, lines 1-3) are not deemed to be persuasive. As indicated in the art rejections, it is old and well known in the art to use the

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angle of the inclination of the clamping element is smaller than the angle of the inclination of the object to be clamped such as a cutting insert as claimed in order to facilitate inserting the clamping element thereinto.

With respect to claim 39, Applicants also argue that, screw 24 is a capped screw and is not a taper screws (page 12, line 4). However, as set forth in the art rejections, Kieninger'771's adjusting element (such as any of elements 56, 24, and 25, see Fig. 2 and Col. 6, lines 62-68) is best reasonably and broadly interpreted as a conical screw since the front end thereof having a conical shape as shown in Fig. 2.

With respect to claim 19, Applicants also argue that, the eccentric bushing 27 is received in a running fit. Such a fit does not allow working at high speed (page 12, lines 11-12) and this reference does not teach or suggest a positive-fit for either of the cutting insert or the clamping element (page 12, lines 15-18). Examiner disagrees with Applicants. Note "working at high speed" is not the claimed limitation. As set forth in the art rejection, Kieninger'763 disclose a cutting tool comprising the cutting insert (8, see Fig. 2) being positioned in an eccentric bushing (17, see Fig. 4, and Col. 5, line 27) which is mounted in a positive-fitting manner.

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Applicants also argue that Gupta teaches a tool of a radically different structure, wherein it does not include a basic body as it is conventional for milling cutting heads. Instead, a rotatable hub is provided. It does not include turning plates. No diameter adjustably is provided. No adjustability in longitudinal direction is provided (page 13, lines 1-4). Examiner disagrees with Applicants. As set forth in the art rejection, Gupta disclose, as claimed, a milling cutter comprising the cutting insert (21, see Fig. 3) comprising a cutter (36, see Fig. 3, and Col. 4, lines 43-46) which is soldered on to a carrier (31, see Fig. 3); and the cutter and/or turning plate (36, see Fig. 3) consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (37, see Fig. 3, and Col. 4, lines 43-46). Kieninger'771 in view of Gupta discloses the claimed invention.

Applicants also argue that Allemann does not allow a controlled diameter adjustment since the face angle is varied at the same time. No controlled adjustment is possible for each cutting blade. Also, the cutting edge cannot be adjusted. Examiner disagrees with Applicants. As set forth in the art rejection Kieninger'771 discloses the claimed invention except for: a cooling arrangement being provided in the basic body. Allemann discloses a machine tool comprising a cooling (42, see



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Fig. 3, and Col. 3, lines 31-35) arrangement being provided in the basic body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's tool to comprise a cooling arrangement being provided in the basic body, as taught by Allemann, in order to facilitate cooling the Kieninger'771's cutter for it's longer cutting life.

#### **Conclusion**

10. This is a continuation of applicant's earlier Application No. 09/582,626. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action

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is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

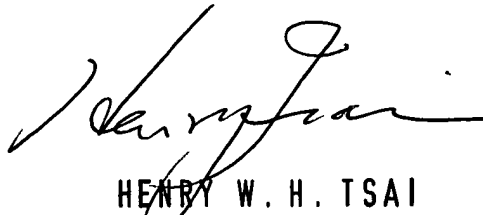
#### ***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (571) 272-4176. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (571) 272-4162. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC central telephone number, 571-272-2100.

12. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions

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directly into **the Group at fax number: 703-872-9306**. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI  
PRIMARY EXAMINER

December 13, 2004